Scopus 28: 31-36, December 2008

Field notes of raptors in and around Mertule Mariam, Gojjam Province, northwest Ethiopia

Joel Prashant Jack and Ashenafi Degefe

In recent years much emphasis has been given to the conservation of raptors especially as a result of widespread population declines reported both regionally and globally (e.g., Thiollay 2006a, b), resulting in the upgrading of the conservation status for several raptors, especially vultures (IUCN 2008). Raptors are perceived to be at a higher risk because of their typically low productivity rates (Bennett & Owens 1997). Loss of habitat and climate change (rise in temperatures at poles) could have some effect on the population sizes and population re-distribution of African and Eurasian Raptors. Habitat modification by man and resultant destruction of breeding sites remains one of the greatest threats for many raptor species.

Mertule Mariam is approximately located between 10°42′ and 10°45′N and 37°51′E in Gojjam province of northwest Ethiopia, situated at an altitude of 2500 m a.s.l. and close to the Choke Mountains IBA (ET013) (EWNHS 1996, BI 2008). Geographically, it occurs on the western fringes of the Choke Mountains range, the closest point being Motta, about 40 km away from Mertule Mariam town. It is generally a mountainous area, with the terrain consisting of cliffs, gorges, undulating slopes, patches of woodland and lowland plateau. Many small streams originate in the mountains. The most remarkable feature of these mountains is the virtual absence of native forest. The major natural habitats are moist moorland with giant *Lobelia* spp., *Alchemilla* spp., sedges and tussocks of *Festuca* spp. and other grasses, montane grasslands and meadows, cliffs and rocky areas (BI 2008). Woody plants, *Erica* spp., *Hypericum revolutum* and *Arundinaria alpina* are also found in patches. Agricultural activity is extensive, with cultivation up to 3000 m (BI 2008). This paper provides notes of raptors seen during a survey of one of the remote areas of Mertule Mariam.

Study Sites

Raptor surveys were conducted at the following three sites within Mertule Mariam:

Site 1: Mertule Mariam Agricultural Technical Vocational Education Training College (ATVET): This College is located in a highland area of Mertule Mariam. The ATVET campus is built in 50 ha of area dominated by *Eucalyptus*, *Cupressus lusitanica*, *Grevillea robusta*, *Dovyalis* species and several *Acacia* species. A massive plantation of *Cupressus lusitanica* inside

the campus provides potential perch for raptor species as well as other birds.

Site 2: Synapose Village: This village is located about 5 km south of ATVET campus. The area between the two sites is dominated by fields and also small hillocks. *Erica arborea, Grevillea robusta, Dovyalis, Olea* species and *Cupressus lusitanica* dominate the flora. Emergent *Eucalyptus* at the foothills of the mountain provide potential vantage sites for raptors.

Site 3: Shrimbrima monastery: This monastery is situated about 20 km north of ATVET at the foot of the valley. The area is dominated by thick patches of vegetation with numerous streams flowing into it. Both broad-leaved and needle-type trees occur in this area. *Olea* species, *Hagenia abyssinica, Cordia Africana, Embelia schimpera, Cupressus lusitanica* dominate the valley wooded belt providing potential habitat for many raptors and woodland birds.

Methods

Bi-weekly surveys were carried out at all three sites between December 2001 and April 2002. There were a total of 42 survey-days, and 252 man-hours at an average of 75 man-hours per site. Surveys involved random walks along specified road or tracks within each site; perch sites were noted where applicable. Observations were carried out only during the day, between 06:00 and 12:00 on the first day, and from 12:00 to 18:30 on the following day. This was deemed sufficient to capture all the diurnal variability in behaviour of the raptors, so as not to miss out any species or important aspects of any of the species.

Results

We recorded 16 raptor species during our surveys; numbers were generally low with only few individuals seen for most species. Highlights for each of these species are provided below, together with their current taxonomy and status following IUCN (2008).

Black-shouldered Kite *Elanus axillaris*

Least Concern: this was one of the local species in this region and it was encountered during all visits. It was most common in the ATVET college campus, perhaps because of numerous perch sites and grasslands, the latter that enabled it locate prey species in the surrounding open grassland.

Yellow-billed Kite *Milvus migrans parasitus*

Least Concern: An Afrotropical migrant that breeds throughout Ethiopia. It was widespread and common. A breeding site has been recorded within the vicinity of Mertule Mariam church. Groups of *c*100 plus birds were recorded in these survey sites especially around a slaughter site at ATVET campus.

Egyptian Vulture *Neophron percnopterus*

Endangered: This species is resident in Ethiopia but also a Eurasian migrant. A total of six birds were recorded during the study period, usually seen soaring near the cliff at Shrimbrima monastery or gliding low over ATVET campus.

Lammergeier *Gypaetus barbatus*

Least Concern: This species is considered widespread and common in the Ethiopian Rift Valley (EWNHS 1996), but only two birds were observed at Mertule Mariam during our survey.

Hooded Vulture *Necrosyrtes monachus*

Least Concern: Was one of the most common vultures in the Mertule Mariam highlands. During slaughter days at ATVET campus (twice a week) these birds would congregate in big numbers in nearby trees; about 57 individuals were seen on 16th March 2002.

African White-backed Vulture *Gyps africanus*

***Near Threatened*: Considered** a common species in Ethiopia, a group of 43 individuals was recorded south of ATVET campus near Synapose village feeding on a donkey carcass.

Rüeppell's Griffon *Gyps rueppellii*

Near Threatened: Regularly recorded throughout Ethiopia. A total of 17 individuals were recorded during the study period mostly on open land around south of ATVET campus and Synapose village, either at a carcass or soaring.

White-headed Vulture *Trigonoceps occipitalis*

Vulnerable: A total of six birds were seen during the study period, at the slaughter site of Synapose village.

African Harrier Hawk *Polyboroides typus*

Least Concern: Resident breeder in this area, a solitary individual was sighted twice during this survey in ATVET campus on a *Cassia* species.

Pallid Harrier *Circus macrourus*

Near Threatened: A total of four birds were recorded during this survey at a local millet field near Synapose village gliding over the fields.

Ovampo Sparrowhawk *Accipiter ovampensis*

Least concern: A solitary bird was recorded on 13th January 2002 east of Synapose village, near local millet field bordering small patch of woodland.

Augur Buzzard *Buteo augur*

Least concern: A common bird throughout most of Ethiopia, a total of 11 individuals were recorded during the study period, mostly on the way to Shrimbrima monastery either perching or soaring.

Tawny Eagle *Aquila rapax*

Least concern: This species was regularly sighted near Shrimbrima monastery either soaring or perched on tall Eucalyptus trees; five individuals were observed during the study period.

Steppe Eagle *Aquila nipalensis*

Least concern: A Eurasian migrant, this species was uncommon in all study sites; only four individuals were recorded during the study period, mostly north of ATVET campus at the Shrimbrima monastery.

Long-crested Eagle *Lophaetus occipitalis*

Least concern: A solitary bird was sighted on two different occasions in the ATVET campus.

Lesser Kestrel *Falco naumanni*

Vulnerable: A relatively common bird in Ethiopia, a pair was recorded in Synapose village near a millet field on two different occasions. It is noteworthy that a flock of 32 individuals was recorded 30 km north of Mertule Mariam but slightly outside of our three survey sites.

Discussion

Even though 16 species of raptors were recorded during the study period, numbers were found to be generally low. This might be due to limited prey availability, limited suitable breeding habitats or (direct and indirect) persecution. Indeed, it has been reported recently that use of pesticides and diclofenac drugs on livestock has precipitated drastic declines in vulture numbers in South Asia (e.g., Green *et al.* 2004).

Large areas within Mertule Mariam are threatened by destruction of the woody vegetation through intense woodcutting (for firewood and charcoal) and agriculture. This has led to the disappearance of suitable habitat – the optimal wooded grasslands, and is likely to have adverse ramifications on medium and small sized birds of prey such as *Aquila*, *Buteo* and *Accipiter* species. In Eastern Africa, migrants and resident raptors largely depend on grasslands and open woodlands habitats for their survival. These habitats play a key role in supporting many Eurasian, Palaearctic and Afrotropical migrant raptors during their migration through East Africa (Brown 1971, Brown *et al.* 1982). Indeed, Bildstein and colleagues (2000) reported that a principal threat to African migrant raptors is the loss of grasslands and savannah.

Another factor worth keeping in mind apart from direct habitat disturbance is climate change. Raptors are vulnerable to modification in the environment

(Dean & Milton 1988). Wichmann and colleagues (2004) modelled extinction risk of Tawny Eagle in South Africa and predicted that even a slight change in rainfall could have a significant impact. More detailed population size, ecological and behavioural studies are urgently needed for the raptors of Mertule Mariam, which seem to be under immediate threat from human-induced habitat loss and degradation, and also face the looming climate change threat.

Acknowledgements

Our sincere thanks go to Simon Thomsett for his critical analysis and valuable comments on the manuscript. Munir Virani also provided insightful comments that improved this article. The author especially Dr. Joel Prashant Jack is thankful to the Dean, Mr.Dagne Tadesse for his co-operation during my stay. Thanks also go to Teshale Belachew, Tafesse Kibatu, Weldosenbet Gebre and Moges Jembere of the ATVET College.

References

Bennett, P.M. & Owens, I.P.F. 1997. Variation in extinction risk among birds: chance or evolutionary predisposition? *Proceedings of the Royal Society of London B* 264: 401-408.

BI 2008. *BirdLife's online World Bird Database: the site for bird conservation*. Version 2.1. Cambridge, UK: BirdLife International. Available: http://www.birdlife.org (accessed 21/11/2008).

Bildstein, K.L., Zalles, J.A., Ottinger, J. & McCarty, K. 2000. *Conservation biology of the Worlds migratory raptors: status and strategies*. R.D. Chancellor and B.U. Meyburg (Eds.) Raptors at six: Proceedings of the V World Conference on Birds of Prey and Owls. Johannesburg. South Africa.

Brown, L. 1971. *African Birds of Prey*. Houghton Mifflin, Boston, USA.

Brown, L.H, Urban, E.K & Newman, K 1982: *The Birds of Africa* Volume 1. Academic Press, London.

Dean, W.R.J. & Milton, S.J. 1988. Dispersal of seeds by raptors. *African Journal of Ecology* 26: 173-176.

EWNHS 1996. *Important Bird areas of Ethiopia. A First Inventory*. Ethiopian Wildlife and Natural History Society, Addis Ababa.

Green, R.E., Newton, I., Shultz, S., Cunningham, A.A., Gilbert, M., Pain, D.J., & Prakash, V. 2004. Diclofenac poisoning as a cause of vulture population declines across the Indian subcontinent. *Journal of Applied Ecology* 41: 793-800.

IUCN 2008. 2008 IUCN Red List of threatened species. IUCN: The World Conservation Union. http://www.iucnredlist.org/.

Thiollay, J.M. 2006a. The decline of raptors in West Africa: long-term assessment and the role of protected areas. *Ibis* 148: 240-254.

Thiollay, J.M. 2006b. Severe decline of large birds in the Northern Sahel of West Africa: a long-term assessment. *Bird Conservation International* 16: 353-365.

Wichmann, M.C, Dean, W.R.J. & Jeltsch, F. 2004. Global challenge challenges the Tawny Eagle (*Aquila rapax*): modelling extinction risk with respect to predicted climate and land use changes. *Ostrich* 75: 204-210.

Joel Prashant Jack (Corresponding author)
Department of Environment, Faculty of Public Health, Post Box 18251, Al-Arab Medical University, Benghazi, Libya, E-mail for correspondence: joelprashant@gmail.com
Ashenafi Degefe
Post Box 68, Ministry of Agriculture, Motta, Ethiopia

Scopus 28: 31-36, December 2008
Received February 2008